

Madronella viridis (Jepson) comb. nov. (*Monardella viridis* Jepson, Flora W. Mid. Calif. 465. 1901). A plant of western California bearing *Puccinia Monardellae* Dudl. & Thomp., a distinctively Californian rust.

Coleosanthus megalodontus (Greenm.) comb. nov. (*Brickellia megalodonta* Greenm. Proc. Am. Acad. 40: 34. 1904). A Mexican plant bearing the rust *Puccinia Brickelliae* Peck.

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SHORTER NOTES

NOTES ON HEMEROCALLIS, II.—A previous note (Amer. Mid. Nat. 1914-15) dealt with the nomenclature, specific description, and the distribution of the North American members of this genus, *H. fulva* and *H. flava*. In 1917, the writer conducted experiments upon *H. fulva*, obtaining results which appear to be of interest if only from a negative standpoint, since the experimental procedure involved seems somewhat similar to the more probable physiological forces at work in the conditions under which the plant forms mature seeds.

Referring to Knuth's Handbook of Flower Pollination, we read that, "according to Sprengel's assertion which Kerner confirms, the plant (*H. fulva*) never sets fruit here, so it is highly probable that in its original home in E. Asia, it is pollinated by such insects as are not to be found in Europe. Maximowicz states that artificial pollination is also ineffective, the flowers do not produce mature seeds in Europe. Sprengel, who pollinated the flowers artificially with their own pollen, also obtained no fruits, etc."

No such limitations affect *H. flava*, indeed Linnaeus believed *H. flava* and *H. fulva* (commonly known as the yellow lily and day lily respectively) to form a composite type species (*H. lilioasphodelus*), for the genus, and that one was really a variety of the other, a fact readily comprehensible when their great anatomical, if not physiological resemblance, be kept in mind.

Largely from the basis of the preceding information the writer attempted to produce mature seeds in *H. fulva*. The experiments conducted divided themselves into four groups:

I. Fertilization of the flowers with their own pollen.

a. After the blossoms had completely opened.

b. Before the blossoms had opened sufficiently for them to be pollinated from other sources, but when their own pollen seemed about to discharge.

c. Before the blossoms had opened sufficiently to obtain pollen from other sources, an incision was made in the ovary, and pollen as obtained in the preceding placed therein.

d. Before the blossom had completely opened the stigma was snipped off, and pollen placed directly upon the top of the style.

II. Fertilization of the flower with pollen from the same clump of day lilies. In this group further procedure was essentially similar to that outlined in Group I, except that the anthers of the flower were first removed.

III. Fertilization of the flowers with the pollen of a far removed clump of day lilies. Inquiry revealed the fact that this group of the plants and that used in Group I did not have a common original locality and were probably genetically distinct. In Group III also the further procedure was similar to Group I, except that the anthers of the pollinated flower were first removed.

IV. Fertilization of the flowers with pollen from the yellow lily, *H. flava*. Attempts at cross-fertilization were made as already indicated in the other groups.

Control of the above experiments was obtained by tying a small paper bag over each experimental flower. *The results of the above experiments were negative in every respect.* No mature seeds were ever formed. An effect of the paper bags was to lengthen the life of the flower appreciably.

In a previous number of *TORREYA* (Vol. 18, Dec. 1918), double flowers were reported for *H. fulva*. Continued observation indicates that such seem common in the Mississippi river region from Missouri up to St. Paul, Minn. In some localities no other type of flower was observed.

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